

REMARKS

Claims 1-4 were presented for examination. In an Office Action dated February 8, 2008, claim 1 was objected to and claims 1-3 were rejected. In response, Applicants are amending claims 1, 3, and 4. Claims 1-4 are pending upon entry of this amendment.

Summary of Interview

Applicant thanks Examiner Heneghan for his time in conducting a telephone interview on March 24, 2008. During the telephone interview, Applicant's representatives Antonia Sequeira and Carlo Ocampo, and Examiner Heneghan discussed proposed claim amendments to claim 1. During the telephone interview, the Examiner indicated claim 4 to be allowable and discussed modifications to claim 4 to clarify the language of claim 4 for incorporation into claim 1. The Examiner agreed, for the reasons further detailed below, that the amendments presented herein would likely overcome the current rejection.

Objection to the Claims

Claim 1 has been amended to correct the antecedent basis issues present in the claim in the manner suggested by the Examiner in the Office Action. In addition, the Applicant has made minor amendments to the format of claims 3 and 4.

Response to Rejection Under 35 USC 102(b)

Claim 1 stands rejected under 35 USC § 102(b) as allegedly being anticipated by Wolczko, U.S. Patent No. 6,401,137. This rejection is now traversed in view of the amended claim.

As amended, claim 1 recites a method of protecting application program software executing API code including:

actuating a tracer function to copy a segment of instructions from the API code until an instruction from the API code is reached that is one selected from the group consisting of a call instruction ending outside of scope, a jmp instruction ending outside of scope, a sysenter instruction, a syscall instruction and a branch instruction ending outside of scope or until an instruction above a predetermined number of instructions is reached, wherein the predetermined number of instructions is above two instructions;

storing and executing the copied instructions; and
returning to the next instruction of the API code, wherein the next instruction of the API code is a first uncopied instruction of the API code.

These features of the claimed invention beneficially avoid a break point at the beginning of the API code by actuating a tracer function to copy a segment of instructions from the API code and executing the copied instructions. The segment of instructions from the API code is copied until an instruction from the API code is reached that is one selected from the group consisting of a call instruction ending outside of scope, a jmp instruction ending outside of scope, a sysenter instruction, a syscall instruction and a branch instruction ending outside of scope or until an instruction above a predetermined number of instructions is reached, wherein the predetermined number of instructions is above two instructions. After execution of the copied instructions, the software program returns to the next instruction of the API code which is a first uncopied instruction of the API code. Hence, execution of the original API code containing the break point is avoided.

Wolczko does not disclose “actuating a tracer function to copy a segment of instructions from the API code until an instruction from the API code is reached that is one selected from the group consisting of a call instruction ending outside of scope, a jmp instruction ending outside of scope, a sysenter instruction, a syscall instruction and a branch instruction ending outside of scope or until an instruction above a predetermined number of instructions is reached, wherein the predetermined number of instructions is above two

instructions.” Wolczko discloses a method of patching instructions related to the virtual call within a single instruction cycle. (Wolckzo, col. 2, lns. 37-42) As noted by the Examiner, Wolczko discloses that the virtual call and the address identifier related instructions fit within a predetermined boundary of inline cache. (Wolckzo, col. 6, lns. 7-9.) There is no hint, mention or suggestion anywhere in Wolckzo of storing only a segment of instructions of the virtual call and address identifier related instructions until certain instructions are reached, what more the specific instructions recited by the claimed invention. Wolczko merely stores the entire virtual call and the address identifier related instructions within the inline cache. In contrast, the claimed invention only copies a segment of instructions from the API code until an instruction from the API code is reached that is one selected from the group consisting of a call instruction ending outside of scope, a jmp instruction ending outside of scope, a sysenter instruction, a syscall instruction and a branch instruction ending outside of scope.

Additionally, there is no hint, mention or suggestion anywhere in Wolckzo of storing only a segment of instructions of the virtual call and address identifier related instructions until an instruction above a predetermined number of instructions is reached, wherein the predetermined number of instructions is above two instructions. As previously mentioned, Wolckzo only discloses that the entire virtual call and address identifier related instructions are stored within the inline cache. Thus, Wolczko does not disclose “actuating a tracer function to copy a segment of instructions from the API code until an instruction from the API code is reached that is one selected from the group consisting of a call instruction ending outside of scope, a jmp instruction ending outside of scope, a sysenter instruction, a syscall instruction and a branch instruction ending outside of scope or until an instruction above a

predetermined number of instructions is reached, wherein the predetermined number of instructions is above two instructions.”

Based on the above amendment and the remarks, Applicant respectfully submits that for at least these reasons claim 1 is patentably distinguishable over the cited reference. Therefore, Applicant respectfully requests that the Examiner reconsider the rejection, and withdraw it.

Response to Rejection Under 35 USC 103(a)

The Examiner rejects claims 2-3 under 35 USC § 103(a) as allegedly being unpatentable over various combinations of Wolczko in view of Jakubowski, U.S. Patent No. 7,080,257. Claims 2-3 incorporate the limitations of claim 1 and Applicant submits that the claims are allowable for at least the reasons described above, in addition to the further patentable limitations recited therein.

Allowable Subject Matter

Applicant thanks the Examiner for indicating that claim 4 would be allowable if rewritten to include all of the limitations of the base claims and any intervening claims. Per the phone call with the Examiner, Applicant has incorporated into claim 1 the Examiner’s suggested amendments that are similar to the language of claim 4. Thus, Applicant respectfully submits that claim 1 should now be allowable.

Conclusion

In sum, Applicant respectfully submits that claims 1 through 4, as presented herein, are patentably distinguishable over the cited references. Therefore, Applicant requests reconsideration of the basis for the rejections to these claims and request allowance of them.

In addition, Applicant respectfully invites the Examiner to contact Applicant's representative at the number provided below if the Examiner believes it will help expedite furtherance of this application.

Respectfully Submitted,
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